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TRACHEAL BOT FLY (*TRACHEOMYIA MACROPI*) IN AN EASTERN GREY KANGAROO (*MACROPUS GIGANTEUS*).

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The enigmatic bot fly *Tracheomyia macropi* (Frogatt 1913) is the only native species of oestrid fly in Australia and the only extant member of the *Tracheomyia* lineage (Pape 2006). Larvae of this myiasis-causing parasite inhabit the pharynx, trachea, bronchi and bronchioles of kangaroos and wallabies where they feed on mucosal secretions. Little is known about the life-cycle of pupal and adult stages outside the macropod host and few cases have been documented (McCarthy, 1961; Mykytowycz, 1963; Arundel *et al*. 1989; Speare *et al*. 1989; Portas & Spratt 2008). In this study, we report the incidental necropsy findings of a larval infestation of *T. macropi* in an eastern grey kangaroo, *Macropus giganteus* Shaw, 1790 from a wild population in south-east Queensland. This expands the known host and locality records for this parasite as well as confirming its relatively low pathogenicity.

In early spring 2014, there were reports of deaths of approximately 30 eastern grey kangaroos from a high density population in Wacol in Brisbane's western suburbs (27°34′45.4″S, 152°54′53.9″E). Two weak and cachectic eastern grey kangaroos were assessed by a wildlife hospital, and subsequently euthanised and submitted for necropsy. In one individual, a 7.5 kg sub-adult female, there were a total of twelve third-stage instars at the tracheal bifurcation (Fig. 1). The larvae were removed, preserved in 70% ethanol and identified using light microscopy. Voucher specimens were deposited at the Australian National Wildlife Collection, CSIRO Canberra (W/L HC# AR1624) QMN registration T234460.

Macroscopically, the trachea was congested and contained stable foam, but no erosive lesions were observed. Tissues were fixed in 10% neutral buffered formalin, paraffin-embedded, sectioned and stained with haematoxylin and eosin using standard methods. Histopathological examination of the tracheal bifurcation found evidence of mild to moderate, multifocal ulcerative tracheitis with squamous metaplasia and hyperplasia of remnant epithelium in affected areas. A diverse array of ecto- and endoparasites were identified in this animal and the other *M. giganteus* from the same outbreak. In both animals, severe hepatopathy due to infestation with the platyhelminth *Fasciola hepatica* was deemed to be the principal cause of mortality, although polyparasitism and poor nutrition were likely contributors to debility.

The histological findings in this case are similar to those previously described for tracheal bots in other species of macropod (Speare *et al*. 1989; Portas & Spratt 2008). This case concurs with previous studies in which *T. macropi* is generally regarded as an incidental finding rather than a primary pathogen (Portas & Spratt, 2008). Previous reports of *T. macropi* in eastern grey kangaroos are confined to NSW, though they have also been recorded in "Downs and Gidyea country" of central Queensland in either eastern or western grey kangaroos (McCarthy 1961). Other reports specifically mention an absence of infection in grey kangaroos compared to sympatric red kangaroos, *Macropus rufus* (Mykytowycz 1963; Arundel et al. 1989). The current case provides confirmation that *M. giganteus* can also be host to *T. macropi* and extends the known distribution of this parasite.

FIG. 1 *Tracheomyia Macropi*, third-stage instars removed from the tracheal bifurcation in *Macropus giganteus* (bar = 1 mm). Variation in colour reflects maturity within the third-stage instar and may partly be an artefact of preservation in ethanol.

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